

SOLID WASTE MANAGEMENT IN KADAPA MUNICIPAL CORPORATION - A CASE STUDY

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ABSTRACT

Solid waste management is one essential service provided by municipal authorities in our country to keep our cities clean. Solid waste management system is always a serious problem for cities throughout the world. It is also a serious problem in India which is a developing country. In day to day life Modern civilization has brought a lot of luxuries and conveniences to us. However, with all of the amenities that modern life brings us, they also cause us to contribute by producing a large quantity of solid waste that needs to be taken care. Solid waste management is one of the best opportunities which take care of above problem. Solid waste management is an internal element of modern society. Even if we don't observe what goes on to the facilities, rivers, ponds, atmosphere, agriculture land, plants etc.,

So many ways are there to clean municipal solid waste as useful source of energy with the advancement of modernized Technology. The present paper deals with solid waste management system of Kadapa Municipal Corporation, which is a district municipal corporation of Andhra Pradesh in India. This area is situated at the river bank of Penna. The dumped garbage is mixing with river water so that there is a negative impact on environment. The process of Solid Waste Management (SWM) system of Kadapa Municipal Corporation protects this large river from uncollected or dumped garbage.

KEYWORDS: Solid Waste Management (SWM), Awareness, Disposal Techniques, Reduce, Reuse, Recycle.

Received: Oct 27, 2016; **Accepted:** Nov 14, 2016; **Published:** Nov 16, 2016; **Paper Id.:** IJEEFUSDEC20164

INTRODUCTION

Kadapa is a district head quarter of YSR Kadapa located in Rayalaseema region of Andhra Pradesh. It was constituted as corporation in the year 2005 vide G.O.Ms.No.125, dated: 17.03.2005 and G.O.Ms.No.89, MA, dated: 30.05.2006 the area of corporation was 164.08 sq.km.

The city Kadapa is located at 14°-29' N Latitude and 78°-50' E Longitude. It is situated on Chennai – Mumbai railway line. Kadapa city is a tail end of Kurnool Kadapa canal. The city is surrounded three sides by the Nallamala forest and Palakonda hills. The city is nicknamed as Gadapa (which means 'Threshold') because it is the gateway from the west to the sacred hills of Tirumala, a holy place of Lord Sri Venkateswara Swami.

The population growth in Kadapa Municipal Corporation is as shown in Table-1.

Table 1: Population Growth in Kadapa City

Years	Population	Decade Variation	Decadal growth (%)
1961	49,027	0	
1971	66,195	17,168	35.01
1981	1,03,125	36,930	55.78
1991	1,21,463	18,338	17.78
2001	1,26,505	5042	4.15
2011	3,44,078	2,17,573	171.98

SOURCE: MUNICIPAL CORPORATION, KADAPA

For good urban and environmental management, solid waste management plays an important role [2, 3]. Currently In India, municipal solid waste management system, like other infrastructural services was under great stress, consider low priority areas, solid waste management was not considered seriously either by public or by concerned authorities. The present study was been carried out in Kadapa city in the year 2016 to understand the problems and perspective associated with solid waste management system.

MATERIALS AND METHODS

In our present study, we considered the municipal corporation area of the Kadapa city. The municipal workers collect solid waste from all the streets of the Kadapa city. Based on quartering method the well mixed one KG of sample was tested and the constituent's percentage was calculated. The solid waste generation data was collected from Municipal Corporation of Kadapa. The Kadapa city map is as shown in Fig: 1.



Figure 1: Geographical Area of Kadapa City

ANALYSIS AND DISCUSSIONS

Kadapa Municipal Corporation is responsible for collection of municipal waste which is produced day by day from different areas of Kadapa city. It is noted that there are five borough and 38 wards in Kadapa city. We consider 5,630 houses for our study. Solid waste generating areas are listed below.

- Play Ground/ Parks
- Domestic Buildings/ Houses

- Houses containing shops
- Markets
- Institutions
- Hospitals /Hotels
- Small scale industries etc.,

Table 2

Serial No	Ward Number	Number of Market	Population
1	6	1	4688
2	8	1	7632
3	18	1	5453
4	21	1	5919
5	23	1	4202
6	30	1	4994
7	31	1	3321

BULK WASTE COLLECTION

Bulk Solid waste is collected from the following parts

- *Hotels*
- *Chicken & Mutton Stalls*
- *Marriage halls*
- *Theatres*
- *Hospitals*

Table 2: Waste Collection in Kadapa

S. No	Heads	No. Available
1	Dustbins	70
2	Collection points (Heaps)	134
3	Coverage of households through door to door collection	62252
4	No. of tri – cycles	78

Table 3: Waste Transportation in Kadapa

S. No	Heads	No. Available
1	Own tractors	4
2	Private tractors	7
3	Mini tippers	2
4	No. of Trips per day	72
5	Cost of Transportation per year	Rs.47 lacs

The following points can be summarized from the above two tables:

- In ward number eight Garbage production from houses is high among all wards, as there are highly populated.
- Similarly garbage production is also high in seventh ward as it is a market area.

- Tenth ward having hospitals produce higher amount of bio-garbage than other wards.

GARBAGE COLLECTION PROCEDURE

Kadapa Municipal Corporation is responsible for collecting the garbage from different areas of Kadapa town. Municipal Authority is collecting this garbage in regular manner. There are numbers of big dust bins in several areas of the city and several wards share each big dust bins. Garbage is accumulated in this bin from adjacent areas. In each block three sweepers are working. For garbage collection procedure, 250 persons are involved. The municipal workers collect garbage from roads and streets. This will be transferred to dumping yards through tractors and trucks.

MODE OF GARBAGE TRANSPORTATION

The garbage collection starts with sweeping of roads and streets by the municipal workers. This solid waste is transported by trucks to the dumping yard. In this process the vehicle like Tri-cycle, Tractor, Mini Lorry, Trucks etc are used.

WASTE GARBAGE DISPOSAL

The collected waste garbage is disposed to the dumping yard which has the area of 15 acres. This should be disposed according to solid waste management and handling rules 2000.

Waste Minimization Methods

- Community Awareness
- Door – to – Door
- School Awareness
- Rallies
- Auto Awareness

CONCLUSIONS

The Kadapa municipal corporation solid waste management system looks very inadequate and to be improved a lot. The improvements may be like scientific techniques to waste disposal, Solid waste segregation should be in technical manner to make the waste more useful energy source. Vehicles used for solid waste collection should be increased. Similarly the workers population needs to increase for effective collection and solid waste management in Kadapa city

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APPENDICES



Figure 1: Collection and Transportation of Solid Waste in Kadapa Corporation



Figure 2: Disposals of Solid Waste in Kadapa Corporation

